

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-15. (Canceled)

16. (Currently Amended) A method for producing a nanowire, comprising the step of:

carrying out at least a modification treatment on a multi-walled carbon nanotube having at least two layers of graphene sheets so as to produce a nanowire having a core portion and a functional layer, the core portion having a carbon nanotube having at least one layer of the graphene sheets, the functional layer formed around the core portion and having a modified graphene sheet originated from at least one of the graphene sheets around the core portion,

wherein the modification treatment is a combination of (1) a mechanochemical treatment and (2) ~~at least one treatment selected from a group consisting of a heating treatment and in~~ an acidic solvent treatment, performed sequentially in that order.

17-18. (Canceled)

19. (Original) The method according to claim 16, wherein the modification treatment is carried out till hollow tubular portions surrounded by a graphene sheet originated from the carbon nanotube of the core portion and node portions separating the hollow tubular portions are formed alternately in the nanowire in a longitudinal direction of the nanowire.

20. (Original) The method according to claim 16, wherein the modification treatment is carried out till defects are produced at least in a surface of the multi-walled carbon nanotube so that a carbon nanotube having a hollow tubular portion surrounded by a graphene sheet is left as the core portion while the modified graphene sheet originated from at least one of graphene sheets is formed around the core portion.

21. (Original) The method according to claim 20, wherein the modified graphene sheet has an amorphous carbon area.

22. (Original) The method according to claim 16, wherein the modification treatment is carried out till defects are produced at least in a surface of the multi-walled carbon nanotube so that a carbon nanotube having a hollow tubular portion surrounded by a graphene sheet is left as the core portion while the modified graphene sheet originated from at least one of graphene sheets and which has an amorphous carbon area is formed around the core portion, and a network structure in which a plurality of such nanowires adhere to one another through the amorphous carbon areas is formed.

23. (Original) The method according to claim 16,
wherein the multi-walled carbon nanotube has at least three layers; and
wherein the functional layer has at least two layers of modified graphene sheets.

24-25. (Canceled)